

inserting said egg into an oviduct or uterus of a female of said mammalian species to obtain offspring carrying said DNA segments;

breeding said offspring to produce female progeny that express said first, second and third DNA segments and produce milk containing biologically active human fibrinogen that is converted to fibrin upon reaction with human thrombin encoded by said segments;

collecting milk from said female progeny; and

and recovering the biologically active human fibrinogen that is converted to fibrin upon reaction with human thrombin from the milk.

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cont

33. A transgenic non-human female mammal that produces recoverable amounts of biologically active human fibrinogen that is converted to fibrin upon reaction with human thrombin in its milk, wherein said mammal comprises:

a first DNA segment encoding a secretion signal operably linked to a heterologous fibrinogen  $\text{A}\alpha$  chain,

a second DNA segment encoding a secretion signal operably linked to a heterologous fibrinogen  $\text{B}\beta$  chain, and

a third DNA segment encoding a secretion signal operably linked to a heterologous fibrinogen  $\gamma$  chain, and further wherein each chain is derived from the same species and is operably linked to additional DNA segments required for its expression in the mammary gland of a host female mammal.--